*Journal of Risk Analysis and Crisis Response, 2023, 13(1), 49-69*
*https://jracr.com/*
*ISSN Print: 2210-8491*
*ISSN Online: 2210-8505*

*Review*

# A Systematic Literature Review on Financial Support for the Development of Strategic Emerging Industries

**Su-juan Xu [1,2] and Mu Zhang [1,*]**

[1] School of Big Data Application and Economics, Guizhou University of Finance and Economics, Guiyang (550025), Guizhou, China
[2] Guizhou Institution for Technology Innovation & Entrepreneurship Investment, Guizhou University of Finance and Economics, Guiyang (550025), Guizhou, China
* Correspondence: zhangmu01@163.com; Tel.: +86-0851-88510575

Received: October 23, 2022; Accepted: March 13, 2023; Published: March 31, 2023

**Abstract:** In order to further promote the theoretical research on the effective financial support for the high-quality development of strategic emerging industries, this paper reviews the research status at home and abroad on the mechanism and path, influence effect, support efficiency, support system, problems and countermeasures of financial support for the development of strategic emerging industries. At present, the research on financial support for the development of strategic emerging industries at home and abroad is mainly conducted from the perspective of financial support and financing. Under the two perspectives, the influence effect can be subdivided into direct financing, indirect financing and comprehensive financing, and the research on support efficiency can be divided into national and regional studies. The support system can be divided into three aspects: horizontal, vertical, and horizontal and vertical synthesis. Problems and countermeasures are subdivided into four aspects: countermeasures, policies, strategies and optimization paths. Future research directions include: Deepening the mechanism of financial support for strategic emerging industries from the perspective of financing; Expand the research of vertical support system for the development of strategic emerging industries.

**Keywords:** Strategic Emerging Industries; Financial Support; Literature Review

## 1. Introduction

Under the influence of the global financial crisis in 2008, significant changes have taken place in the industrial system all over the world. To get out of the financial crisis as soon as possible, all countries regard the development of emerging industries as the key point to promote economic development. Strategic emerging industries are the combination of emerging technologies and emerging industries. They play a leading role in the overall and long-term development of the economy and society. With huge market potential, strong driving capacity and high comprehensive income, they represent the direction of scientific and technological innovation and industrial development. The development of strategic emerging industries is a major strategic choice made by China with an international perspective and strategic thinking. However, the development of strategic emerging industries cannot be achieved without financial support, which requires a large amount of financial support in the process of development. The financial industry can promote the development of strategic emerging industries by giving full play to the role of financing channels. The state also attaches great importance to the development of strategic emerging industries. The central and local governments have successively issued policies on the capital, human resources and intellectual property rights to promote the healthy, sustained and rapid development of strategic emerging industries.

At present, the domestic and foreign scholars have abundant researches on financial support for the development of strategic emerging industries, which are carried out theoretically and empirically from different perspectives. The concept of strategic emerging industries was first put forward in China in 2010. Since then, many scholars have studied the development of financial support for strategic emerging industries. However, there are no direct studies on strategic emerging industries in foreign countries, but more studies on emerging industries and financial support for emerging industries and economic growth.

This paper reviews the domestic and foreign literatures on financial support for the development of strategic emerging industries, and the structure of the remaining parts is arranged as follows: The second part introduces the mechanism and path of financial support for the development of strategic emerging industries. The third part introduces the effect of financial support for the development of strategic emerging industries. The fourth part introduces the support efficiency of finance to the development of strategic emerging industries. The fifth part introduces the financial support system for the development of strategic emerging industries. The sixth part introduces the problems and countermeasures of financial support for the development of strategic emerging industries. Part 7 is a brief comment.

## 2. The Financial Support Mechanism and Path of Strategic Emerging Industries

### *2.1. Mechanism Study*

#### 2.1.1. Financial Support Perspective

Relevant scholars have studied the financial support mechanism for the development of strategic emerging industries, analyzed the organizational structure and form of financial resources to support the development of economy and industry, and the specific aspects to promote the development of strategic emerging industries. Gu Haifeng (2013) [1] from the perspective of capital market, established the "One body, two systems" policy support system with capital market as the main body and policy-based financial support mechanism and market-based financial support mechanism as the two systems. Pan Juan (2013) [2] believes that capital flow to strategic emerging industries through financial support mechanism, resource-oriented mechanism and risk sharing mechanism to optimize the allocation of financial resources and realize the adjustment and allocation of financial elements. Shi Zhangming (2014) [3] believed that the development of strategic emerging industries could be promoted through three mechanisms: promoting technological innovation, easing financing constraints and improving capital allocation efficiency. Fang Lai (2018) [4] believes that the mechanism of finance on strategic emerging industries is mainly that finance provides strategic emerging industries with different capital allocation methods, multiple financing channels, and improves the efficiency of capital allocation and risk control. Jin Guanghui and Liu Zhiyuan et al. (2016) [5] studied from the perspective of investors and found that policy uncertainty increased the risk perception and ambiguity aversion of investors, which had a negative impact on their sentiment, and investor sentiment became an important medium for policy uncertainty to affect corporate investment.

#### 2.1.2. Financing Perspective

From the perspective of financing, Hu Haifeng and Hu Jiya (2011) [6] compared and analyzed the financing mechanisms of strategic emerging industries dominated by the US market, Japanese banks and German universal banks. Gu Haifeng (2011) [7], based on the industry life cycle theory, realized the cultivation goal through the initial optimal allocation of credit resources in the cultivation stage of strategic emerging industries, achieved the development goal through the secondary optimal allocation of credit resources in the development stage, and achieved the upgrading goal through the third optimal allocation of credit resources in the upgrading process. Xie Qinghe (2013) [8] analyzed the internal mechanism of financial support for the cultivation and development stage of strategic emerging industries, to guide the internal dynamic factors and financial system innovation to promote the development of strategic emerging industries. Ma Junwei (2013) [9] believed that the financial system affects and supports the development of strategic emerging industries mainly through capital formation, technological innovation and the mechanism of resource allocation. Liu Guowei and Shao Yunfei (2021) [10] believe that the game between the innovation subject of strategic emerging industries and the financial support subject is a double-helix coupling relationship including power and opportunity behavior.

### *2.2. Path Study*

#### 2.2.1. Financial Support Perspective

Zhao Tianyi (2013) [11] designed a combination of the capital chain of science and technology finance, the value chain of technology innovation, and the industrial chain of strategic emerging industries. Through policy guidance and institutional innovation, various social capital was invested in strategic emerging industries. Tang Youwei (2012) [12] believes that financial support for the development of strategic emerging industries can be considered from the aspects of policy system, financing service system, external policy environment, and a financing service system suitable for the characteristics of strategic emerging industries can be established by broadening the channels of enterprise equity financing service, establishing the docking platform of finance and technology, integrating financial resources, and strengthening the cooperation between bank and government and insurance.

#### 2.2.2. Financing Perspective

From the perspective of the insurance industry, Tian Juanjuan and Liang Feng (2015) [13] believe that the insurance industry should support the development of strategic emerging industries with diversified investment forms, design special insurance products for them, improve the risk supervision mechanism, and build a trinity financing support and risk guarantee system of "government-strategic emerging industries - insurance".

## 3. The Influence Effect of Financial Support on Strategic Emerging Industries

### *3.1. Financial Support Perspective*

#### 3.1.1. Direct Financing

Li Fuyou and Yin Haifeng (2014) [14] concluded that financial support can promote the development of strategic emerging industries. Zhang Hongyan and Wang Lei (2015) [15] studied the quarterly data of more than 400 listed companies in strategic emerging industries and reached the same conclusion: In the short term, there is a one-way causal relationship between the two, and financial support is the reason for the development of strategic emerging industries. In the long run, they cause and affect each other. Zhang Lu (2016) [16] believes that multi-level capital market plays an important supporting role in accelerating the development of strategic emerging industries, but there is a problem that the proportion of direct financing is small. Chen Jin and Liu Xinzi (2016) [17] believed that in the process of supporting the development and internationalization of strategic emerging industries, development finance played a positive role in promoting the development and internationalization of strategic emerging industries by taking advantage of the exemplary role of policy-based finance, risk control, sufficient capital and credit enhancement.

Some studies have found that financial support has little or no effect on the development of strategic emerging industries. Gu Xin (2012) [18] investigated the industrial performance effect of the capital market of China's high-end equipment manufacturing industry and found that China's capital market had a negative effect on the development of high-end equipment manufacturing industry in strategic emerging industries. Luo Jin and Zeng Lu (2015) [19] took 38 listed enterprises of strategic emerging industries in Hunan Province as research objects. The research showed that direct financial support had little effect on the promotion of strategic emerging industries in the initial and growth stages. Yan Junzhou et al. (2020) [20] found that financial support is not conducive to improving innovation efficiency, and financial support has a masking effect between government subsidies and innovation efficiency.

#### 3.1.2. Indirect Financing

Wang Jing and Hu Lijun (2019) [21] collected the financial data of 30 listed companies in strategic emerging industries in Hubei Province from 2010 to 2015. Using the GMM method, they studied the influence of bank credit financing, equity financing and retained earnings financing on profitability, and found that different financial support means have different effects.

#### 3.1.3. Comprehensive Financing

Huang Jiankang et al. (2015 [22], 2016 [23]) believed that although the capital market system was gradually improved, the proportion of direct financing was relatively low. They established a dynamic panel model for empirical analysis of the data of listed companies in strategic emerging industries in Zhejiang Province and Jiangsu Province. The results of Zhejiang Province show that equity financing has a negative effect on the development of strategic emerging industries in Zhejiang Province, retained earnings financing has a positive effect, and bank credit financing has no significant effect. The research results of Jiangsu Province show that retained earnings financing and commercial credit financing play a positive role in supporting the development of strategic emerging industries in Jiangsu Province, while bank credit financing and equity financing play a negative role in supporting the development of strategic emerging industries in Jiangsu Province, and bond financing plays an insignificant role in the development of strategic emerging industries in Jiangsu Province. Gao Linrui et al. (2018) [24] found that indirect financial system dominated by bank credit has a negative effect on the development of strategic emerging industries in Gansu province, while bond financing as a direct financial support plays a positive role in the development of strategic emerging industries in Gansu province, but equity financing as a direct financial support mode plays a negative role.

The research results of Wang Jian and Zhang Zhuo (2015) [25] show that the direct financial system dominated by capital market has a more stable positive supporting effect than the indirect financial system dominated by bank credit. Net fixed assets and net intangible assets have different effects on the development of strategic emerging industries. The labor input level has a significant positive effect on the development of strategic emerging industries. From the perspective of corporate governance, Yang Ronghai and Li Yabo (2017) [26] thought from a long-term perspective, the impact shows a steady increase. The impact of indirect finance on the growth of enterprises in emerging industries is higher than that of direct finance, while the impact of direct financial support is steadily increasing.

### *3.2. Financing Perspective*

#### 3.2.1. Direct Financing

Dong Xuemei and Yang Qian (2014) [27] compared the impact of private equity investment on the development of strategic emerging industries. The business performance of enterprises with private equity investment was not better than that of enterprises without private equity investment, and the average profitability was even lower than that of enterprises without private equity investment. Tian Juanjuan and Liang Feng (2016) [28] studied the policy-based financing effect of strategic emerging industries, indicating that the financing effect of Chinese policy-based loans on strategic emerging industries is not obvious, while that of government venture capital guidance fund is obvious. Geng Chengxuan and Zeng Gang (2019) [29] argued that most enterprises face relatively serious financing constraints, and financing constraints caused by cash flow and debt financing have a significant impact on financing efficiency, and the number of direct government subsidies and the proportion of state-owned property rights can help alleviate financing constraints. Wang Jinfu and Zhang Yaoling (2019) [30] found that internal financing has the strongest promoting effect on R&D and innovation of strategic emerging enterprises, followed by government subsidies, followed by debt financing and equity financing. R&D and innovation can effectively improve the external financing ability of enterprises, but has little promoting effect on internal financing and government subsidies. Lin Xiaoling and Chen Ming (2020) [31] believe that the R&D incentive effect of fiscal subsidies on non-free trade zone enterprises is better than that of free trade zone enterprises, the R&D incentive effect of fiscal subsidies on strategic emerging industries is more effective than that of traditional industrial transformation, and the R&D incentive effect of fiscal subsidies on private enterprises is better than that of state-owned enterprises.

#### 3.2.2. Indirect Financing

Shi Zhangming et al. (2015) [32] used panel quantile regression method to make an empirical analysis of the easing effect of financial development on the financing constraints of strategic emerging industries. The result showed that strategic emerging industries still had the problem of financing constraints. Jiang Yongling and Lei Xiaoyu (2016) [33] found that the involvement of venture capital has a significant positive driving effect on the financing of strategic emerging industries. Strategic emerging enterprises with venture capital background are more likely to obtain external debt financing represented by short-term debt financing and external equity financing. Hu Jiya (2020) [34] empirically analyzed the role of external financing methods in the development of strategic emerging industries and found that the variable of bank loan financing rate was negatively correlated with the return on equity, the variable of commercial credit financing rate was positively correlated with the return on equity.

3.2.3. Comprehensive Financing

Zhang Hongyan and Wang Lei (2016) [35] investigated the influence of the development of China's banking industry and stock market on the development of strategic emerging industries. The development of banks and stock markets can effectively improve the financing constraints of strategic emerging industries, and the development of stock market can ease the financing constraints of strategic emerging industries more than the development of banks. Liu Yibei and Liu Hongwei (2020) [36] argued that only the endogenous financing mode has a significant positive impact on the total factor productivity of enterprises. The equity financing mode of enterprises with higher asset specificity is conducive to improving the total factor productivity of enterprises. The debt financing model will reduce the total factor productivity of enterprises, while the internal financing model is less affected by this. Xu K. et al. (2019) [37] constructed an indicator system of financing ecology to analyze the impact of external and internal financing ecology on financing efficiency. The results show that the financing ecology of strategic emerging industries, especially the external financing ecology, is constantly improving. Xu K. and Geng C. (2020) [38] believe that both financial intermediation and the development of the stock market play an important role in alleviating restrictions on R&D financing, and the development of the stock market can better alleviate restrictions on R&D financing.

*3.3. The Influence of Financing Structure from the Perspective of Financing*

Ling Jianghuai and Hu Wenrong (2012) [39] found that equity capital reduces the operating performance of traditional industries but improves the operating performance of strategic emerging industries, and their scale expansion is more likely to be implemented through equity financing. Huang Qingshan et al. (2013) [40] found that debt financing had a significant positive correlation with corporate performance, while equity financing had a significant negative correlation with corporate performance, and internal financing had no significant impact on business performance. Sun Zao and Xiao Liping (2016) [41] found that internal financing and equity financing have a significant positive effect on the independent innovation of listed enterprises in strategic emerging industries. Debt financing has an inhibitory effect on the independent innovation of listed enterprises in strategic emerging industries. Pan Haiying and Hu Qingfang (2019) [42] believe that there is an interactive relationship between corporate financing structure and innovation level, but this interaction only exists in enterprises in growth and maturity stages, while enterprises in recession stage only have a one-way influence from financing structure to innovation level. Zeng Fanrong et al. (2020) [43] found that there was an inverted U-shaped relationship between financing structure and corporate performance in strategic emerging industries, and an inverted U-shaped relationship between financing structure and innovation efficiency. Innovation efficiency played a significant role in partially mediating the relationship between financing structure and corporate performance of listed companies in emerging industries.

## 4. The Financial Support Efficiency of Strategic Emerging Industries

### *4.1. Financial Support Perspective*

#### 4.1.1. National Level

The research of Xiong Zhengde and Lin Xue (2010) [44] shows that the realization of financial support efficiency is accompanied by the increase of risks. In the case of insufficient indirect financing driving force, direct financing becomes the main support for the development of strategic emerging industries. Li Donglin (2016) [45] believes that the efficiency of financial support for strategic emerging industries in China has not reached the optimal level, the economies of scale of financial support industry development need to be improved, and the resource allocation function of the financial system still needs to be further optimized and improved. Li Meng and Yang Yang (2017) [46] calculated the comprehensive efficiency and dynamic efficiency of financial support for strategic emerging industries respectively, indicating that the financial support efficiency of strategic emerging industries under the new normal of the economy is relatively effective, but the overall downward trend should be vigilant. Indirect and direct financing is conducive to the development of strategic emerging industries. Liu Zhengqiao (2018) [47] concluded that the number of years of establishment and market competition had a significant positive effect on the financial support efficiency. Corporate scale and asset-liability ratio have significant negative effects on financial support efficiency, while ownership concentration degree and ownership balance degree have certain positive effects on financial support efficiency. Ren Zhengyu (2021) [48] takes listed companies in China's strategic emerging industries from 2011 to 2017 as the research object. The results show that the financial support efficiency of listed companies in strategic emerging industries is low, and the comprehensive efficiency shows a U-shaped trend of first decreasing and then rising. Scale efficiency is higher than technical efficiency.

From the strategic emerging industry of seven sub-sectors, Ma Junwei (2013 [49], 2014 [50]) believed that from the perspective of sub-industries, there were differences in the financial support efficiency of seven strategic emerging industries. The efficiency of resource allocation in the development process is not optimal. Li Meng and Wang Anqi (2016) [51] also believe that the technical efficiency of China's strategic emerging industries is still relatively low. Although the efficiency of financial support for strategic emerging industries has been on the rise since the new Normal of the economy, there are great differences among the seven major industries. Xiong Zhengde et al. (2011) [52] believed that it was difficult to achieve financial support efficiency in the three industries of high-end equipment manufacturing, new generation information technology and biology, and the influencing factors of financial support efficiency highlighted the characteristics of stages. Zhai Huayun (2012) [53] showed that the equity financing efficiency of energy conservation and environmental protection, new energy, new materials and information technology industries increased greatly in 2011, while the equity financing efficiency of high-end technology equipment industry remained at a high level although it did not increase. And the efficiency of equity financing of biological and new energy automobile industry decreased slightly.

#### 4.1.2. Regional Level

Some scholars have studied the financial support efficiency of strategic emerging industries in some regions. Tan Zhongming et al. (2015) [54] uesd relevant data of 105 listed companies in Jiangsu, Zhejiang and Shanghai in emerging industries, and they found that to improve the development efficiency of financial support industries, technical efficiency and scale efficiency of the industries must be improved at the same time. Li Donglin (2016) [55] used data envelopment method (DEA) combined with Malmquist model to measure the financial support efficiency of the capital market for listed companies in the field of strategic emerging industries in Shanghai and Shenzhen, and found that the application of high and new technologies in the financial field and the reengineering of products and business processes played a good supporting role in the development of strategic emerging industries in China. Ma Junwei and Wang Jianhua (2019) [56] took the Yangtze River Delta region as the research object, the results showed that the financial support efficiency of the development of strategic emerging industries presented a large inter-provincial difference, and technical factors were significantly correlated with the efficiency. Chen Xiaorong et al. (2020) [57] took 237 listed companies of strategic emerging industries in Beijing, Tianjin and Hebei as research samples, tested the efficiency of financial support and its dynamic changes by using DEA model and Malmquist productivity index. The research results found that the strategic emerging industries in Beijing, Tianjin and Hebei had not yet realized the optimal allocation of financial resources and the overall efficiency of financial support showed a downward trend. The overall technical efficiency is low because of the low scale efficiency, and the overall efficiency of financial support is reduced because of the delay in updating the technical level.

Some studies take a province as the research object and find that the financial support efficiency of most enterprises is low or ineffective. Cheng Li (2014) [58], Deng Yan and Lu Pengguang (2016) [59] took the strategic emerging industries in Guangdong province as the research object to measure their financial support efficiency. The research showed that the average comprehensive efficiency of financial support for the strategic emerging industries in Guangdong Province was low. Wang Shuhua (2016) [60] calculated the financial support efficiency of strategic emerging industries in Gansu Province based on DEA model, and found that the financial support efficiency of biological industry and new energy industry was the highest, while other industries were not ideal, mainly because of low pure technical efficiency. Ma Junwei and Wang Jianhua (2016) [61] studied the financial support efficiency of strategic emerging industries in Jiangsu province and its influencing factors, and the results showed that the comprehensive efficiency of financial support for strategic emerging industries in Jiangsu province was not optimal, and the overall efficiency trend was also declining. Fang Lai (2018) [4] took 20 listed companies with the characteristics of strategic emerging industries in Gansu province as the research object and found that the capital allocation of strategic emerging industries in Gansu province was basically in an inefficient state, and the development of strategic emerging industries in Gansu province was mainly restricted by the financing dilemma.

### *4.2. Financing Perspective*

#### 4.2.1. National Level

Lv Zhiyuan and Zhang Mu (2020) [62] believe that in addition to common financial and non-financial indicators, big data indicators of Baidu Index play a prominent role in influencing the equity financing efficiency of listed companies in strategic emerging industries. Wang Qiong and Geng

Chengxuan (2017) [63] proposed a six-stage DEA model based on the four-stage DEA model, considering the information of input relaxation variables and the influence of external environment and random factors. The empirical results show that the financing efficiency of most enterprises is still at a low level. Efficiency differences among Chinese provinces also provide another support for the environmental impact of strategic emerging industries.

From the perspective of subdivided industries, Huang Yaxi and Zhang Mu (2017) [64] show that equity financing efficiency of listed companies in strategic emerging industries is low, different industries have different degrees of input redundancy and output shortage, and the development of equity financing efficiency is unbalanced among different industries. Zeng Gang and Geng Chengxuan (2019) [65] studied the internal motivation of insufficient financing efficiency of enterprises. Enterprises can improve financing efficiency by improving financing structure and reducing investment redundancy. Among the seven sub-industries, the biological industry has the highest efficiency, while the new energy automobile industry has the lowest efficiency. Xiong Zhengde et al. (2014) [66] showed that the debt financing efficiency of listed companies in the new energy automobile industry was low, and the relatively low debt financing efficiency was the main reason. With the passage of time, the two-stage efficiency of most listed companies in the new energy automobile industry gradually tends to double efficiency. Chen Xiangyuan and Wang Ying (2020) [67] showed that biomedicine industry and energy conservation and environmental protection industry had the highest comprehensive level, while high-end equipment manufacturing industry and new energy industry had the lowest financing efficiency. Li Sisi and Zhang Mu (2020) [68] measured the equity financing efficiency of listed companies in strategic emerging industries, analyzed the equity financing efficiency in different years and compared it among seven industries, and found that the equity financing efficiency of listed companies in strategic emerging industries was generally low, mainly distributed in a low efficiency range. The pure technical efficiency and scale efficiency are mostly distributed in the higher efficiency range every year. The equity financing efficiency has unbalanced development among industries.

#### 4.2.2. Regional Level

Li Jingwen et al. (2014) [69] took 51 listed companies of strategic emerging industries in Beijing as samples and found that the financing efficiency of strategic emerging industries in Beijing was generally low. Wang Qiong and Geng Chengxuan (2016) [70] carried out static and dynamic evaluation on the financing efficiency of 29 listed companies in strategic emerging industries in Jiangsu Province, and the research showed that the improvement of financial ecology and innovation environment could significantly improve the financing efficiency. The overall financing efficiency showed an upward trend, but the average annual growth was slowing down. Zeng Gang and Geng Chengxuan (2018) [71] conducted static and dynamic evaluation on the financing efficiency of strategic emerging industries in Beijing-Tianjin-Hebei, and the results showed that the average financing efficiency of the strategic emerging industries in Beijing-Tianjin-Hebei was small, with significant capital input overcapacity. The average financing efficiency of the strategic emerging industries in Tianjin was the highest, followed by Hebei, and the lowest was Beijing.

## 5. The Financial Support System of Strategic Emerging Industries

### *5.1. Financial Support Perspective*

5.1.1. Horizontal

The construction of financial support system for strategic emerging industries needs the combination and coordination of finance and finance. He Jiye (2016) [72] and Hu Zhaoju (2016) [73] believe that the construction of financial support system for strategic emerging industries needs to strengthen the coordination between finance and finance, strengthen macro-policy regulation and control, build a financial risk rating system, cultivate compound financial talents, and build a risk investment and risk avoidance mechanism. The policy system of strategic emerging industries should be effectively connected with the policy system of financial support. Ma Junwei and Wang Jianhua (2018) [74] believe that the "going out" strategy can generate many cross-border and offshore financial service demands, increase the utilization mode and demand of foreign capital, and build a policy-based financial support, risk-oriented financial support, and a systematic and multi-level integrated financial support system at home and abroad.

5.1.2. Vertical

Related scholars have studied from the perspective of industry life cycle. Gu Haifeng (2011) [75-78], based on the perspective of market-based finance and policy-based finance, believed that the development of strategic emerging industries supported by market-based finance and policy-based finance includes the cultivation process, development process and upgrading process. The cultivation process and development process pay attention to giving full play to the supporting role of market-based finance and policy-based finance to guide the promoting effect of internal dynamic factors on the scale of industrial development. The upgrading process should pay attention to the role of market finance and policy finance in supporting technological innovation. Zhang Zhuo (2012) [79] believes that in the growth stage of enterprises, a financial support system with bank credit, capital market and private financing as the theme should be built, and the role of private financing should be played to provide funds for the growth stage. Liu Hongchang and Yan Shuai (2013) [80] built a multi-level and diversified financial support system based on the financing needs of strategic emerging industries in different cycles, including the support of credit market and capital market, as well as the collaborative support of policy finance and commercial finance. Yan Zeying (2014) [81] integrated various financial funds according to the capital requirements characteristics of strategic emerging enterprises at different stages of independent innovation, combined with the financial and financial support modes of strategic emerging enterprises, and built a financial and financial linkage support mode for strategic emerging enterprises. From the perspective of enterprise life cycle, Li Yabo (2018) [82] explored the financial support factors most consistent with different stages of the life cycle, and found that enterprises in the growth and maturity stages tend to prefer indirect finance, while enterprises in the later maturity or recession stage are more willing to choose the form of equity to get financial support, and direct financing plays a more significant role in this stage.

5.1.3. Horizontal and vertical synthesis

Hu Haifeng and Sun Fei (2010) [83] proposed that the supporting role of finance in the cultivation of strategic emerging industries could be fully brought into play through policy means such as establishing the coordination mechanism between finance and fiscal and building a multi-level financial support supply system. Zhao Tianyi (2013) [11] designed a science and technology finance support system for strategic emerging industries from the perspectives of public science and technology finance, mixed technology finance and market science and technology finance. Hu Chi (2014) [84, 85] believes that multi-form and multi-channel investment and financing systems and institutional arrangements should be built to adapt to the different financial needs of different stages of the development of strategic emerging industries and different industrial chain links, and effectively transform them dynamically.

### *5.2. Financing Perspective*

#### 5.2.1. Horizontal

Hu Jiya (2020) [86] divides the seven strategic emerging industries into three tiers. The three industries in the first tier mainly rely on financial support and equity financing, the two industries in the second tier mainly rely on financial support, and the two industries in the third tier tend to rely on debt financing and financial support.

#### 5.2.2. Vertical

Based on the perspective of industrial development, Deng Yan et al. (2011) [87] studied the financing mode of strategic emerging industries mainly from the development cycle of strategic emerging industries, and believed that different development cycles and different industrial chain links have different financing modes, but policy-based financing runs through the whole development mode. Liu Cunping et al. (2014) [88] proposed financing policies at different stages based on the life cycle theory of emerging industries. Lin Songchi (2014) [89] proposed the development path of strategic emerging industries in different periods. In the initial stage, direct financing is the main source of government support; in the growth stage, debt financing is the main source of other financing methods; in the mature stage, various financing methods are combined; and in the recession stage, they are supported by their own funds.

## 6. The Financial Support Problems and Countermeasures of Strategic Emerging Industries

### *6.1. Financial Support Perspective*

#### 6.1.1. Countermeasures

Tan Zhongming and Li Zhanqi (2012) [90] put forward some countermeasures and suggestions on innovating the credit business model of commercial banks, establishing science and technology banks, further improving the capital market, developing the bond market of strategic emerging industries, developing new insurance varieties and establishing the insurance mechanism of strategic emerging industries. Ma Junwei (2013) [91] proposed to realize the effective combination of finance and strategic emerging industries by improving market mechanism, optimizing financial structure, promoting rational return of equity investment, and innovating financial technology or financial products. Wang Jian and Zhang Zhuo (2014) [92] put forward suggestions from the aspects of industrial development, industrial process and industrial objectives, including whole-process financial support, exploring diversified financing channels, giving full play to the financing guarantee function of policy-based guarantee institutions and innovating financial support modes. Wang Hui (2019) [93] put forward countermeasures and suggestions on financial support for the development of strategic emerging industries from three aspects: increasing the scale of financial support, optimizing the structure of financial support and improving the efficiency of financial support.

From the perspective of commercial banks, relevant scholars put forward relevant countermeasures for financial support of strategic emerging industries. Liu Zhibiao (2011) [94] believes that commercial banks should increase credit input, adjust credit structure, accelerate innovation of scientific and technological financial products and services, and realize strategic transformation of commercial banking business while supporting the transformation of economic development mode. Lv Tie and Yu Jian (2012) [95] believe that financial innovation is needed to further transform the traditional financing mode and create new financing mode to promote the development of strategic emerging industries more effectively. Commercial banks should be guided to increase substantive support for strategic emerging industries, expand financing channels and tools, and increase policy support. Chen Chen (2013) [96], aiming at the problem of the banking industry supporting the development of strategic emerging industries, proposed countermeasures such as strengthening policy support, improving bank credit process management, perfecting risk sharing mechanism and external incentive mechanism.

In view of financial support for strategic emerging industries in some provinces, Liu Jianmin et al. (2012) [97] put forward countermeasures and suggestions to support and promote the development of strategic emerging industries in Hunan, including strengthening government guidance, giving full play to the initiative of financial institutions, improving capital market and financial infrastructure construction. In view of the development of strategic emerging industries in Jiangsu Province, Mao Zesheng and Wang Hongmian (2012) [98] suggested that Jiangsu Province should continue to increase government investment to actively develop venture capital, innovate the credit mechanism of commercial banks, vigorously support the listing of enterprises, and try to improve various supporting measures to promote the development of strategic emerging industries. She Zhihong (2013) [99] proposed the following optional countermeasures to promote the healthy development of strategic emerging industries in Wuhan: establishing a green channel to increase the supply of financial support resources, strengthening the supporting and guiding role of policy-based financial support, and optimizing the operation mode of commercial financial institutions.

#### 6.1.2. Policy

Some scholars put forward policy suggestions from various aspects. Based on the life cycle theory, Gu Haifeng (2011) [100, 101] designed policies for different development stages of strategic emerging industries. He designed financial support policies for the evolution of strategic emerging industries from the level of marketable direct finance and market-based indirect finance, and designed ideas for financial support for the development of strategic emerging industries. Li Ming (2011) [102] put forward policy suggestions on encouraging financial service innovation, expanding financing channels, optimizing financing environment and strengthening coordination among government departments. Yuan Qingsong (2011) [103] studied the credit policies of commercial banks to support the development of strategic emerging industries. According to the development status and prospect of strategic emerging industries, different measures should be taken for different industries, ideas and products should be innovated, and professional talents and teams should be cultivated. Lv Tie and Yu Jian (2012) [104] believed that there was a mismatch between the industrial characteristics and financial demands of strategic emerging industries and the traditional financing mode, and financial innovation was needed to further transform the traditional financing mode and create new financing mode, to promote the development of strategic emerging industries more effectively. Sun Xiaojuan (2013) [105] put forward specific policy suggestions, such as innovating the way of financial investment in science and technology, improving the risk investment mechanism, designing the standards of the open market, improving the bond and bill market, encouraging the investment of listed companies through policies, innovating the financing service system of commercial banks, and promoting the cooperation between finance and science and technology.

Relevant scholars put forward policies from the perspective of capital market. Liu Hongchang and Yan Shuai (2013) [80] proposed that the policy orientation of financial support for the development of strategic emerging industries includes the establishment of multi-level capital market and venture capital market, the establishment of a coordination mechanism between finance and finance, the innovation of financial supply mode, and the strengthening of legislation. Xia Zhe and Wang Xiaodong (2014) [106] proposed relevant financial innovation policy suggestions: Develop equity investment and strengthen the direct financial system, focus on the government's guiding funds for entrepreneurship, industry and mergers and acquisitions, coordinate policy-based financial instruments and capital markets, build regional multi-level bond markets, improve the intermediary service system for investment and financing, and promote indirect financing of new industries, innovate financial derivatives and consumer credit models. Zhang Lu and Gu Xiaogang (2014) [107] explored and designed specific policies and measures for the venture capital market to support the front-end cultivation of strategic emerging industries from the aspects of perfecting the multi-level capital market system, constructing the scientific and technological financial system, optimizing the operating environment of venture capital and improving the supporting policies and incentive mechanism. Kan Jingyang (2017) [108] put forward some countermeasures and suggestions to develop investment and loan linkage, venture capital leasing and bill pool business, and improve the financing function of incubator.

### 6.1.3. Strategy

Hu Jianbo and Gu Shikui (2012) [109] proposed strategies to boost China's strategic emerging industries, strengthen institutional innovation, accelerate and improve green credit, broaden financing channels, and optimize human resource allocation. Zan Donghai (2012) [110] believed that financial support for science and technology should be strengthened in order to promote the process of property rights, marketization and industrialization of proprietary intellectual property achievements in strategic emerging industries. In view of the financial service system in Wuhan, Yu Zhen et al. (2012) [111] proposed that financial agglomeration should be further adopted to strengthen the construction of financial organizations and service platforms, develop multi-level direct financing market, improve the construction of credit system, and further promote the cluster development of strategic emerging industries in the East Lake Demonstration Zone. Taking Hunan as an example, Zeng Xiandong (2012) [112] made an empirical analysis of the development status and financial support of strategic emerging industries. The supporting policies and environment of financial services still need to be improved, the corresponding strategies are put forward in the aspects of bank credit management system, investment and financing channels, enterprise management behavior and intermediary service system. Chu Haiying (2014) [113] put forward strategic suggestions on the support of science and technology finance for the development of strategic emerging industries in Inner Mongolia. It is necessary to give full play to the role of financial finance, promote the development of bank credit technology, make full use of capital market and venture capital, promote science and technology insurance services, and improve the science and technology financial service platform.

### *6.2. Financing Perspective*

#### 6.2.1. Countermeasures

Hu Jiya (2013 [114], 2014 [115]) believed that the imperfect financing service system and the uneven distribution of financing funds are the most prominent problems in the financing process of China's strategic emerging industries. Expanding financing methods, strengthening financial innovation and strengthening financial supervision are the key to solve the financing problems of China's strategic emerging industries. It is suggested to release the policy restrictions, actively encourage the participation of various financing subjects, vigorously expand financing channels, improve the policy system and market system, make full use of social capital to realize the optimal allocation of funds, guide the combination of venture capital and strategic emerging industries to improve the financing mechanism of strategic emerging industries. Bu Xiaoning and Huang Ruliang (2013) [116] put forward relevant countermeasures for the establishment of credit guarantee system for strategic emerging industries: the guarantee risk compensation fund for strategic emerging industries can be established, the re-guarantee mechanism of guarantee institutions can be improved, and the guarantee cooperation alliance for strategic emerging industries can be established. Based on the game analysis of "Harsanyi Transformation", Hu Jiya (2021) [117] believes that the establishment of information exchange platform and penalty mechanism for breach of contract can partially solve the problem of information asymmetry, and proposes to reduce government discount, establish information exchange platform and risk mitigation mechanism, carry out multi-party cooperation mode, and build reward and penalty mechanism to reduce moral hazard of credit subjects.

#### 6.2.2. Optimization Paths

Gu Shengzu et al. (2014) [118] believe that it is very difficult for traditional financing channels to obtain financial support, and equity investment and financing chain dominated by angel investment, venture capital and private equity investment should be constructed to provide financial support. Private capital investment channels should be further expanded to promote the healthy development of angel investment, venture capital and private equity investment, and a complete equity investment chain should be constructed. And promote institutional innovation to improve the availability and effectiveness of equity financing in strategic emerging industries. Zhang Zongcheng and Wang Yun (2014) [119] analyzed the current situation and existing problems of investment and financing development of strategic emerging industries, and then proposed the ideas of fiscal, tax and financial support policy support and strengthening development financial support, to improve the investment and financing mechanism of strategic emerging industries. Hu Jiya (2019) [120], aiming at the problems of financing structure imbalance, capital resource mismatch, slow institutional construction and insufficient financial innovation in the financing process of strategic emerging industries, put forward suggestions: financial support should be phased and specific, investment and financing companies should be actively established in strategic emerging industries, capital market system should be improved, and innovation should be strengthened to vertical deepening and systematic development.

## 7. Brief Comment

Since the concept of strategic emerging industries was first proposed by the Chinese government, there is almost no direct study on financial support for the development of strategic emerging industries in foreign literature. The object of foreign research is emerging industries, mainly starting from a certain financial market body or a certain financing method, to study the impact of financial support on the development and innovation of emerging industries or small and medium-sized enterprises, the relationship between financial support and economic development, the relationship between banking and the development of emerging industries, the relationship between venture capital and the development of emerging industries. Therefore, there are many indirect literatures on financial support for the development of strategic emerging industries. Domestic scholars mainly from the theoretical and empirical aspects of financial support for the development of strategic emerging industries. In theory, it focuses on the study of the mechanism and path of financial support for the development of strategic emerging industries, discusses the importance of financial support for the development of strategic emerging industries, studies the existing problems and puts forward countermeasures and suggestions accordingly, but rarely studies the financial system from the perspective of financial structure. Most of them put forward relevant countermeasures without in-depth analysis of the reasons for doing so. In terms of empirical research, efficiency measurement tools such as DEA and SFA are mainly used to measure the efficiency of financial support, and relevant data are used to build models to study the impact of financial support on the development of strategic emerging industries. However, most relevant research data in China are based on the influence of listed companies on sub-industries, which leads to insufficient representation of research objects. Moreover, research is mostly conducted on single factors, and there are few studies on the supporting effects of different ways.

In the theory and practice of financial support for strategic emerging industries, more attention may be paid to the relevance of financial support for the development of strategic emerging industries, the space for innovation and risk control in the practice of financial support for strategic emerging industries in the future.

**Funding:** This research was funded by the Regional Project of National Natural Science Foundation of China, grant number 71861003.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## References

[1] Gu Haifeng. Industrial Life Cycle, Evolution of strategic Emerging Industries and Financial Support: Based on the Analysis of Capital Market [J]. *Theory Journal, 2013 (04): 56-60,* DOI: https://doi.org/10.14110/j.cnki.cn-37-1059/d.2013.04.011.

[2] Pan Juan. Analysis on the Mechanism of Financial Support for the Development of Strategic Emerging Industries [J]. *Journal of Commercial Economics, 2013 (10): 121-122.*

[3] Shi Zhangming. Research on the Mechanism of Financial Supporting to Strategic Emerging Industry Based on Financial Development [D]. *Wuhan University of Technology, 2014.*

[4] Fang Lai. Financial Support Mechanism and Efficiency Evaluation of the Development of Strategic Emerging Industry: A Case Study of Gansu Province [J]. *Journal of Harbin University of Commerce (Social Science Edition), 2018 (02): 28-37.*

[5] Jin Guanghui, Liu Zhiyuan, Hua Guiru. Policy Uncertainty, Investor Sentiment and Corporate Investment: An Empirical Study on strategic and emerging Industry [J]. *Journal of Central University of Finance and Economics, 2016 (05): 60-69.*

[6] Hu Haifeng, Hu Jiya. The Comparative Analysis and Revelations on the financing mechanisms of Strategic Emerging Industries in U.S., Japan and Germany. [J]. *Economic Theory and Business Management, 2011 (08): 62-74.*

[7] Gu Haifeng. Research on the Mechanism and Policy of Credit System Supporting the Evolution of Strategic Emerging Industries [J]. *Contemporary Economic Research, 2011 (08): 78-82.*

[8] Xie Qinghe. Research on Chinese Financial Support for the Development of Strategic Emerging Industries [J]. *New Finance, 2013 (02): 54-57.*

[9] Ma Junwei. Internal Mechanism of Financial Support for Development of Strategic Emerging Industries [J]. *Science and Technology Management Research, 2013, 33 (17): 16-19.*

[10] Liu Guowei, Shao Yunfei. Study on the Financial Support Mechanism and T-S Evolutionary Game of the Strategic Emerging Industries. [J]. *Operations Research and Management Science, 2021, 30 (04): 87-95.*

[11] Zhao Tianyi. Research on the Path and System of Financial Support for Science and Technology in Strategic Emerging Industries [J]. *Science and Technology Progress and Policy, 2013, 30 (08): 63-67.*

[12] Tang Youwei. Financial support strategic emerging industry development path to study [J]. *China National Conditions and Strength, 2012 (08): 9-11.* DOI: https://doi.org/10.13561/j.cnki.zggqgl.2012.08.016.

[13] Tian Juanjuan, Liang Feng. Financing Risks of Strategic Emerging Industries and Ways to Support Insurance Industry [J]. *Sub National Fiscal Research, 2015 (11): 84-89+96.*

[14] Li Fuyou, Yin Haifeng. An Empirical Research on Financial Support for the Development of Strategic Emerging Industries Based on Granger Test and Co-integration Analysis [J]. *Science and Technology Progress and Policy, 2014, 31 (15): 53-58.*

[15] Zhang Hongyan, Wang Lei. Dynamic Correlation of Chinese Strategic Emerging Industries and Financial Support -- Based on the Shanghai and Shenzhen A-Share Listed Companies' Empirical Data [J]. *The Theory and Practice of Finance and Economics, 2015, 4(06): 14-19.* DOI: https://doi.org/10.16339/j.cnki.hdxbcjb.2015.06.003.

[16] Zhang Lu. Research on multi-level capital market supporting the development of strategic emerging industries -- Based on the Shenzhen Emerging Index sample [J]. *Communication of Finance and Accounting, 2016 (02): 14-16.* DOI: https://doi.org/10.16144/j.cnki.issn1002-8072.2016.02.005.

[17] Chen Jin, Liu Xizi. Research on Development Finance to Support the Development and Internationalization of Strategic Emerging Industries [J]. *Modern Management Science, 2016 (12): 15-17.*

[18] Gu Xing. On the Promotion Effect of Multi-level Capital Market on Strategic Emerging Industries [J]. *Journal of Commercial Economics, 2012 (30): 121-122.*

[19] Luo Jin, Zeng Lu. Research on Interactive Dynamic Financial Support for Strategic Emerging Industries: Based on Empirical Analysis of Hunan Province [J]. *Finance and Accounting Monthly, 2015 (05): 102-105.* DOI: https://doi.org/10.19641/j.cnki.42-1290/f.2015.05.026.

[20] Yan Junzhou, Qi Niannian, Tong Chao. How Do Government Subsidies and Financial Support Influence Innovation Efficiency? -- Empirical Evidence from Listed Companies of Strategic Emerging Industries in China [J]. *Soft Science, 2020 (12): 41-46.* DOI: https://doi.org/10.13956/j.ss.1001-8409.2020.12.07.

[21] Wang Jing, Hu Lijun. Research on the Influence of Financial Support on the Development of Strategic Emerging Industries: Evidence from Listed Companies in Hubei Province [J]. *Hubei Social Sciences, 2019 (01): 56-61.* DOI: https://doi.org/10.13660/j.cnki.42-1112/c.014947.

[22] Huang Jiankang, Zhao Zongyu, Shi Jiamin, Jiang Meihui. Research on Financial Support for the Development of Strategic Emerging Industries in Jiangsu Province -- Based on the Empirical Analysis of Listed Companies [J]. *Science and Technology Management Research, 2016, 36 (02): 95-100.*

[23] Huang Jiankang, Shi Jiamin, Huang Binbin. A Study on Financial Support for the Development of Strategic Emerging Industry in Zhejiang Province--An Empirical Analysis Based on the Dynamic Panel of 30 Listed Companies [J]. *East China Economic Management, 2015, 29 (12): 26-31.*

[24] Gao Linrui, Li Shenglan, Zhang Jianqi. Financial Support for the Influence of the Strategic Emerging Industry Development in Gansu Province [J]. *Research on Development, 2018 (01): 124-131.* DOI: https://doi.org/10.13483/j.cnki.kfyj.2018.01.020.

[25] Wang Jian, Zhang Zhuo. The Effect of Financial Support on the Development of Strategic Emerging Industries: An Empirical Analysis Based on Chinese Listed Companies [J]. *The Theory and Practice of Finance and Economics, 2015, 4 (04): 62-67.* DOI: https://doi.org/10.16339/j.cnki.hdxbcjb.2015.04.011.

[26] Yang Ronghai, Li Yabo. The Source Analysis of the Financial Support to the Enterprise Management for the Strategic Emerging Industry [J]. *Soft Science, 2017, 31 (01): 47-51.* DOI: https://doi.org/10.13956/j.ss.1001-8409.2017.10.11.

[27] Dong Xuemei, Yang Qian. Business Performance and Private Equity Financing of Strategic Emerging Industries: Based on GEM Data [J]. *Finance and Economy, 2014 (03): 68-70.* DOI: https://doi.org/10.19622/j.cnki.cn36-1005/f.2014.03.020.

[28] Tian Juanjuan, Liang Feng. Policy-oriented Financing Effect Analysis of the Strategic Emerging Industry in China [J]. *Rural Financial Research, 2016 (04): 31-36.* DOI: https://doi.org/10.16127/j.cnki.issn1003-1812.2016.04.006.

[29] Geng Chengxuan, Zeng Gang. Government Subsidies, Financing Constraints and Financing Efficiency of Strategic Emerging Industries -- Empirical Research Based on Bilateral Random Boundary Model [J]. *Modernization of Management, 2019, 39 (04): 5-8.* DOI: https://doi.org/10.19634/j.cnki.11-1403/c.2019.04.002.

[30] Wang Jinfu, Zhang Yaoting. Research on the Interaction between Financing Activities and Research and Innovation from the Perspective of Corporate Ownership -- An Empirical Study of 543 Listed Companies Based on Strategic Emerging Industries [J]. *Science and Technology Progress and Policy, 2019, 36 (08): 83-92.*

[31] Lin Xiaoling, Chen Ming. How Does External Financing Effect Innovation Input in Strategic Emerging Industries? [J]. *Credit Reference, 2017, 38 (12): 76-82.*

[32] Shi Zhangming, Cao Haijuan, Zhang Zhangcheng. Discussion on the Relationship Between Financing Constraints, Financial Development and Strategic Emerging Industries [J]. *Journal of Commercial Economics, 2015 (21): 96-98.*

[33] Jiang Yongling, Lei Xiaoyu. Spillover Effects of Venture Capital on Financing Strategic Emerging Industries [J]. *Science and Technology Management Research, 2016, 36 (14): 160-164.*

[34] Hu Jiya. An Empirical Study on External Financing Model and Business Performance of Strategic Emerging Industries: Based on Panel data of 120 Listed Companies in Strategic Emerging Industries [J]. *Academia Bimestris, 2020 (01): 141-149.* DOI: https://doi.org/10.16091/j.cnki.cn32-1308/c.2020.01.019.

[35] Zhang Hongyan, Wang Lei. Financial Development, Financing Constraints and the Development of Strategic Emerging Industries [J]. *Journal of Beijing Technology and Business University (Social Sciences), 2016, 31 (01): 94-101.* DOI: https://doi.org/10.16299/j.1009-6116.2016.01.011.

[36] Liu Yibei, Liu Hongwei. Asset Specificity, Financing Model and Enterprise Total Factor Productivity: Based on the Empirical Analysis of Listed Companies in China' s Strategic Emerging Industries [J]. *Journal of Xiangtan University (philosophy and social sciences), 2020, 44 (01): 98-103.* DOI: https://doi.org/10.13715/j.cnki.jxupss.2020.01.016.

[37] Xu K., Geng C., Wei X. Research on financing ecology and financing efficiency of strategic emerging industries in China [J]. *Journal of Business Economics and Management, 2019, 20 (02), 311-329.* https://doi.org/10.3846/jbem.2019.9592.

[38] Xu K., Geng C. Financial Development, Financing Constraints and Financing Efficiency of Strategic Emerging Industry [J]. *Journal of Technical Economics and Management, 2020 (04): 102-106.*

[39] Ling Jianghuai, Hu Wenrong. Firm Size, Capital Structure and Operating Performance Comparative Study on Traditional Industries and Strategic Emerging Industries [J]. *Finance and Trade Economics, 2012 (12): 71-77.* DOI: https://doi.org/10.19795/j.cnki.cn11-1166/f.2012.12.012.

[40] Huang Qingshan, Deng Yan, Zhao Tianyi. The Relationship between Financing Structure and Business Performance of Strategic Emerging Industries: A Case study of Listed Companies in the Pearl River Delta [J]. *Friends of Accounting, 2013 (18): 44-48.*

[41] Sun Zao, Xiao Liping. Financing Structure and Innovation -- Evidence from A-share of Listing Corporation of Strategic Emerging Industries in China [J]. *Economic Theory and Business Management, 2016 (03): 45-58.*

[42] Pan Haiying, Hu Qingfang. A Research on the Interaction Effect between Enterprise Financing Structure and Innovation Level from the Perspective of Life Cycle: Based on the Empirical Evidence of A-share Listed Companies in Strategic Emerging Industries [J]. *Journal of Nanjing Audit University, 2019, 16 (04): 81-92.*

[43] Zeng Fanrong, Zhang Xuedi, Fang Yu. Financing Structure, Innovation Efficiency and Firm Performance: An Empirical Study of Listed Companies in Strategic Emerging Industries [J]. *Communication of Finance and Accounting, 2020 (01): 79-84.* DOI: https://doi.org/10.16144/j.cnki.issn1002-8072.2020.01.015.

[44] Xiong Zhengde, Lin Xue. Research on the Efficiency and Its Factors of Financial Support about Listed Companies in Strategic Emerging Industry [J]. *Business and Management Journal, 2010, 32 (11): 26-33.* DOI: https://doi.org/10.19616/j.cnki.bmj.2010.11.007.

[45] Li Donglin. Research on Financial Support Efficiency of Shanghai and Shenzhen Stock Markets for Listed Companies in Strategic Emerging Industries: Based on DEA-Malmquist Index Decomposition [J]. *New Finance, 2016 (09): 27-31.*

[46] Li Meng, Yang Yang. Research on Financial Support Efficiency and Influence Factors of Strategic Emerging Industries under the New Normal [J]. *Reform of Economic System, 2017 (01): 129-135.*

[47] Liu Zhengqiao. The Research of the Financial Support Efficiency Measure and Its Effecting Factors of China's Strategic Emerging Industries [D]. *Hunan University, 2018.*

[48] Ren Zhengyu. The Research of the Financial Support Efficiency of Strategic Emerging Industries: Based on the Evidence of Listed Companies in Seven Industries [J]. *Communication of Finance and Accounting, 2021 (04): 160-163.* DOI: https://doi.org/10.16144/j.cnki.issn1002-8072.2021.04.031.

[49] Ma Junwei. Research on the Difference of Financial Support Efficiency of Seven Strategic Emerging Industries and Its Influencing Factors: Based on Empirical Evidence of Listed Companies [J]. *Reform of Economic System, 2013 (03): 133-137.*

[50] Ma Junwei. Efficiency Measure of Financial Support Strategic Emerging Industry in China [J]. *Statistics and Decision, 2014 (05): 153-155.* DOI: https://doi.org/10.13546/j.cnki.tjyjc.2014.05.040.

[51] Li Meng, Wang Anqi. Evaluation and Analysis of Financial Support Efficiency of Strategic Emerging Industries under the New Normal of Economy [J]. *Inquiry into Economic Issues, 2016 (05): 83-87.*

[52] Xiong Zhengde, Zhan Bin, Lin Xue. The Efficiency of Financial Support about Strategic Emerging Industry Based on DEA and Logit Model [J]. *Systems Engineering, 2011, 29 (06): 35-41.*

[53] Zhai Huayun. Financial Support Efficiency of Listed Companies in the Strategic Emerging Industries [J]. *Securities Market Herald, 2012 (11): 20-25.*

[54] Tan Zhongming, Tong Jie, Sheng Zhuyun. Empirical Analysis on the Development Efficiency of Financial Support for Strategic Emerging Industries: Based on the Data of 105 Listed Companies in Jiangsu, Zhejiang and Shanghai [J]. *Wuhan Finance, 2015 (12): 38-41.*

[55] Li Donglin. Path Exploration to Enhance the Efficiency of Financial Support to Strategic Emerging Industries [J]. *Hebei Academic Journal, 2016, 36 (06): 209-213.*

[56] Ma Junwei, Wang Jianhua. On Efficiency of Financial Support for Strategic Emerging Industries Based on Empirical Analysis of the Yangtze River [J]. *Forum on Science and Technology in China, 2019 (10): 52-58*, DOI: https://doi.org/10.13580/j.cnki.fstc.2019.10.007.

[57] Chen Xiaorong, Han Jingwang, Ren Aihua, Sun Zhongyan. Financial Support Efficiency of Strategic Emerging Industries: A Case Study of 237 Listed Companies in Beijing-Tianjin-Hebei Region [J]. *Finance and economy, 2020 (05): 81-88*. DOI: https://doi.org/10.19622/j.cnki.cn36-1005/f.2020.05.011.

[58] Cheng Li. Analysis on Financial Support Efficiency of Strategic Emerging Industries Based on DEA - Tobit Model [J]. *Applied Mechanics and Materials, 2014, 3277 (608-609): 145-150.*

[59] Deng Yan, Lu Pengguang. Financial Support Efficiency of Strategic Emerging Industries: A Case Study of Guangdong Province [J]. *Friends of Accounting, 2016 (24): 71-74.*

[60] Wang Shuhua. Financial Support Efficiency Analysis of Strategic Emerging Industries: Based on the Empirical Study of Listed Companies in Gansu Province [J]. *Journal of Commercial Economics, 2016 (24): 170-172.*

[61] Ma Junwei, Wang Jianhua. Efficiency Evaluation and Influencing Factors in Financial Support of Strategic Emerging Industries in Jiangsu Province [J]. *Forum on Science and Technology in China, 2016 (08): 31- 37*, DOI: https://doi.org/10.13580/j.cnki.fstc.2016.08.025.

[62] Lv Zhiyuan, Zhang Mu. Influencing Factors of Equity Financing Efficiency of the Listed Companies in Strategic Emerging Industry Based on Baidu Index[J]. *Journal of Risk Analysis and Crisis Response, 2020, 10 (04):130-137.*

[63] Wang Qiong, Geng Chengxuan. Research on Financing Efficiencies of Strategic Emerging Listed Companies by Six-Stage DEA Model [J]. *Mathematical Problems in Engineering, vol. 2017, 2017. DOI:* https://doi.org/10.1155/2017/3284657.

[64] Huang Yaxi, Zhang Mu. Research on Evaluation of Equity Financing Efficiency of Listed Companies in Strategic [J]. *Journal of Risk Analysis and Crisis Response (JRACR), 2017, 7(04): 189-213.*

[65] Zeng Gang, Geng Chengxuan. Empirical Study of Measurement of Financing Efficiency and Influencing Factors of Listed Companies in Strategic Emerging Industries: Based on Super SBM-Logit model [J]. *Science and Technology Management Research, 2019, 39(16): 135-143.*

[66] Xiong Zhengde, Yang Fangjuan, Wan Jun. A Study on the Efficiency of Debt Financing of Listed Company Based on Two-stage DEA: An Application to Strategic Emerging Industry of New Energy Vehicles [J]. *The Theory and Practice of Finance and Economics, 2014, 35 (05): 51-56.*

[67] Chen Xiangyuan, Wang Ying. Research on Financing Efficiency of China's Strategic Emerging Industries Based on Super Efficiency DEA and Tobit Model [J]. *International Journal of Emerging Markets, 2020, 17(02): 485-504.*

[68] Li Sisi, Zhang Mu. Equity Financing Efficiency Measurement of Listed Companies in Strategic Emerging Industries Based on DEA [J]. *Journal of Risk Analysis and Crisis Response, 2020, 10 (03): 101-112.*

[69] Li Jingwen, Wang Yuchun, Yang Zhengdong. Strategic Emerging Industries Listed Companies Financing Efficiency Research in Beijing [J]. *Research on Economics and Management, 2014 (06): 74-82.* DOI: https://doi.org/10.13502/j.cnki.issn1000-7636.2014.06.010.

[70] Wang Qiong, Geng Chengxuan. A Study on Financing Efficiency of Jiangsu's Listed Companies in Strategic Emerging Industries - Based on the Panel Data from 2009 to 2014 [J]. *East China Economic Management, 2016, 30 (07): 14-20.*

[71] Zeng Gang, Geng Chengxuan. Financing Efficiency Measure and Strategy of Collaborative Development of Beijing-Tianjin-Hebei Strategic Emerging Industries [J]. *Forum on Science and Technology in China, 2018 (12): 142-149 + 172.* DOI: https://doi.org/10.13580/j.cnki.fstc.2018.12.016.

[72] He Jiye. Theory of Financial Support System to Build Strategic Emerging Industry in China [J]. *Shandong Social Science, 2016 (11): 160-164.* DOI: https://doi.org/10.14112/j.cnki.37-1053/c.2016.11.023.

[73] Hu Zhaoju. Construction of Financial Support System for Strategic Emerging Industries in China [J]. *Social Scientist, 2016 (09): 56-60.*

[74] Ma Junwei, Wang Jianhua. Research on Financial Support for Strategic Emerging Industries under "Going Out" Strategy [J]. *Journal of Commercial Economics, 2018 (09): 167-169.*

[75] Gu Haifeng. Research on Financial Support System and Policy for the Evolution of Strategic Emerging Industries: Based on the Support Perspective of Market Finance [J]. *Inquiry into Economic Issues, 2011 (11): 74-78.*

[76] Gu Haifeng. On Financial Support for Incubation and Growth of Strategic New Industries [J]. *China Opening Journal, 2012 (04): 71-74.* DOI: https://doi.org/10.19625/j.cnki.cn44-1338/f.2012.04.023.

[77] Gu Haifeng. State Developing and Finance Supporting for China's Strategic Emerging Industries [J]. *Securities Market Herald, 2011 (04): 57-61+66.*

[78] Gu Haifeng. The Cultivation, Upgrading and Financial Support of Strategic Emerging Industries [J]. *Reform, 2011 (02): 29-34.*

[79] Zhang Zhuo, Zhang Yuan, Hu Ting. Financial Support and Optimization Path of Strategic Emerging Industries Based on Business Evolution [J]. *Wuhan Finance, 2012 (06): 18-20+8.*

[80] Liu Hongchang, Yan Shuai. Financial Support and Policy Orientation for the Development of Strategic Emerging Industries [J]. *Modern Economic Research, 2013 (01): 60-63+88.*

[81] Yan Zeying. Analysis on Financial Support Modes of Strategic Emerging Enterprises at Different Innovation Stages [J]. *Modernization of Management, 2014 (02): 54-56.*

[82] Li Yabo. Financial Support on Different Life Cycle Stages for Firms in Strategic Emerging Industry [J]. *Journal of Industrial Technological Economics, 2018, 37 (05): 3-10.*

[83] Hu Haifeng, Sun Fei. Research on Financial Support System in the Cultivation of Strategic Emerging Industries [J]. *Expanding Horizons, 2010 (06): 24-26.*

[84] Hu Chi. Financial Support for the Development of Strategic Emerging Industries during the 12th Five-Year Plan Period [J]. *Economic Review Journal, 2014 (08): 17-20.* DOI: https://doi.org/10.16528/j.cnki.22-1054/f.2014.08.018.

[85] Hu Chi. Financial Support for the development of strategic emerging Industries since the 12th Five-Year Plan [J]. *Review of Economic Research, 2014 (27): 27-33.* DOI: https://doi.org/10.16110/j.cnki.issn2095-3151.2014.27.009.

[86] Hu Jiya. Study on Heterogeneity and Financing Pattern Matching of Strategic Emerging-panel data of 120 listed companies in strategic emerging industries [J]. *Journal of Social Sciences, 2020 (04): 44-57*, DOI: https://doi.org/10.13644/j.cnki.cn31-1112.2020.04.005.

[87] Deng Yan, Li Qingyun, Li Huajun. Research on Financing Model of Strategic Emerging Industries Based on Industrial Development Cycle [J]. *Friends of Accounting, 2011 (30): 13-15.*

[88] Liu Cunping, et al. Study of Financing Policy on the Development of Strategic Emerging Material Industry [J]. *Applied Mechanics and Materials, 2014, 3468 (644-650): 4848-4851.*

[89] Lin Songchi. Enterprise Life Cycle Perspective Strategic Emerging Industries Financing Mode Selection [J]. *Communication of Finance and Accounting, 2014 (14): 14-15.* DOI: https://doi.org/10.16144/j.cnki.issn1002-8072.2014.14.027.

[90] Tan Zhongming, Li Zhanqi. Theory of the Development of Strategic Emerging Industry Financial Support Countermeasures [J]. *Enterprise Economy, 2012, 31 (02): 172-175*. DOI: https://doi.org/10.13529/j.cnki.enterprise.economy.2012.02.031.

[91] Ma Junwei. Efficiency of Financial Support for Strategic Emerging Industries Based on Malmquist Model [J]. *Journal of Xi'an University of Finance and Economics, 2013, 26 (02): 11-15.* DOI: https://doi.org/10.19331/j.cnki.jxufe.2013.02.002.

[92] Wang Jian, Zhang Zhuo. Development Efficiency Measurement and Financial Support of Strategic Emerging Industries [J]. *Journal of Zhongnan University of Economics and Law, 2014 (01): 76-81.*

[93] Wang Hui. Financial Support for Strategic Emerging Industries in the New Era and Countermeasures: Based on the Perspective of Government Promotion [J]. *Theoretical Investigation, 2019 (05): 123-128*. DOI: https://doi.org/10.16354/j.cnki.23-1013/d.2019.05.018.

[94] Liu Zhibiao. Technology Banking Functions Construction: Research on Some Critical Problems of Commercial Banks Supporting Strategic Emerging Industries Development [J]. *Nanjing Journal of Social Sciences, 2011 (04): 1-7.* DOI: https://doi.org/10.15937/j.cnki.issn1001-8263.2011.04.017.

[95] Lv Tie, Yu Jian. Practical Innovation, Existing Problems and Policy Suggestions of Financial Support for the Development of Strategic Emerging Industries [J]. *Macroeconomics, 2012 (05): 18-26*, DOI: https://doi.org/10.16304/j.cnki.11-3952/f.2012.05.013.

[96] Chen Chen. The Innovations, Problems and Countermeasures in the Development of Strategic Emerging Industries Supported by the Banking Sector [J]. *Securities Market Herald, 2013 (06): 21-26*.

[97] Liu Jianmin, Wu Fei, Wu Jinguang. The Research on Financial Support Strategy about Strategic Emerging Industry of Hunan Province [J]. *Journal of Hunan University (Social Sciences), 2012, 26 (06): 67-72.*

[98] Mao Zesheng, Wang Hongjin. Analysis on Financial Support for of Strategic Emerging Industries in Jiangsu Province [J]. *Science and Technology and Economy, 2012, 25 (01): 82-85.*

[99] She Zhihong. Financial Support to Promote the Development of Strategic Emerging Industries in Wuhan Health Countermeasures [J]. *Hubei Social Sciences, 2013 (02): 58-61.* DOI: https://doi.org/10.13660/j.cnki.42-1112/c.012081.

[100] Gu Haifeng. Study on Finance Supporting System and Policy to Strategic Emerging Industry Developing [J]. *Modern Finance and Economics-Journal of Tianjin University of Finance and Economics, 2011, 31 (09): 76-83.* DOI: https://doi.org/10.19559/j.cnki.12-1387.2011.09.011.

[101] Gu Haifeng. Financial Support System and Policies for the Cultivation of Strategic Emerging Industries [J]. *Wuhan Finance, 2012 (12): 15-18.*

[102] Li Ming. Giving Full Play to the Role of Financial Support to Promote the Development of Emerging Industries -- A Survey of the Financial Support for the Development of Strategic Emerging Industries in Xiangtan City [J]. *Wuhan Finance, 2011 (11): 57-59.*

[103] Yuan Qingsong. Support for the Development of Strategic Emerging Industry Credit Policy Research [J]. *Macroeconomic Management, 2011 (05): 51-52.* DOI: https://doi.org/10.19709/j.cnki.11-3199/f.2011.05.020.

[104] Lv Tie, Yu Jian. Problems and Countermeasures of Financial Support for the Development of Strategic Emerging Industries [J]. *Chinese Cadres Tribune, 2012 (09): 30-32.*

[105] Sun Xiaojuan. Research on Financial Support in Strategic Emerging Industries Development for Gansu Province [J]. *Lanzhou Academic Journal, 2013 (11): 163-168.*

[106] Xia Zhe, Wang Xiaodong. The Policy Research on Financial Support for Guangzhou's Strategic Emerging Industry [J]. *Science and Technology Management Research, 2014, 34 (24): 37-40.*

[107] Zhang Lu, Gu Xiaogang. Front-end Cultivation of Strategic Emerging Industries and Policy Design of Venture Capital Market [J]. *South China Finance, 2014 (03): 10-14.*

[108] Kan Jingyang. For the Development of Strategic Emerging Industry Financial Support Policy Research [J]. *Review of Economic Research, 2017 (34): 83-88.* DOI: https://doi.org/10.16110/j.cnki.issn2095-3151.2017.34.012.

[109] Hu Jianbo, Gu Shikui. The Development and Financial Support Strategy of China's Strategic Emerging Industries [J]. *Practice in Foreign Economic Relations and Trade, 2012 (11): 27-31.*

[110] Zan Donghai. Financial Support for Intellectual Property of the Strategic Emerging Industries [J]. *Chongqing Social Sciences, 2012 (08): 73-79.* DOI: https://doi.org/10.19631/j.cnki.css.2012.08.012.

[111] Yu Zhen, Li Chunzhi, Wu Ying. Financial Support for the Development of Strategic Emerging Industries in Wuhan: Based on the Perspective of Co-agglomeration [J]. *Wuhan University Journal (Philosophy & Social Science), 2012, 65 (06): 107-111.*

[112] Zeng Xiandong. Financial Support Strategy for the Rapid Development of Strategic Emerging Industries -- Based on the Investigation of Hunan Province [J]. *Wuhan Finance, 2012 (08): 29-31.*

[113] Chu Haiying. Research on Sci-tech Finance Supportive Strategies of the Development of Strategic Emerging Industries in Inner Mongolia [J]. *Scientific Management Research, 2014, 32 (04): 68-71.* DOI: https://doi.org/10.19445/j.cnki.15-1103/g3.2014.04.018.

[114] Hu Jiya. Strategic Emerging Industry Development in Our Country's Financing Problem Research [J]. *Journal of Chinese Youth Social Science, 2013, 32 (06): 108-113.* DOI: https://doi.org/10.16034/j.cnki.10-1318/c.2013.06.007.

[115] Hu Jiya. Strategic Emerging Industry in Our Country the Financing Present Situation, Problems and Countermeasures [J]. *Journal of Chinese Youth Social Science, 2014 (06): 95-100.* DOI: https://doi.org/10.16034/j.cnki.10-1318/c.2014.06.046.

[116] Bu Xiaoning, Huang Ruliang. Financing Predicament and Credit Guarantee System Reconstruction of Strategic Emerging Industries [J]. *Reform, 2013 (09): 33-39.*

[117] Hu Jiya. The Current Situation, Problems and Countermeasures of Credit Financing in Strategic Emerging Industries Game Analysis Based on "Harsanyi Transformation" [J]. *Soft Science, 2021, 35 (02): 1-6.* DOI: https://doi.org/10.13956/j.ss.1001-8409.2021.02.01.

[118] Gu Shengzu, Ma Junwei, Gao Mei. The Development of Strategic Emerging Industry Need Perfect Equity Investment and Financing Chain [J]. *Forum on Science and Technology in China, 2014 (10): 5-10.* DOI: https://doi.org/10.13580/j.cnki.fstc.2014.10.002.

[119] Zhang Zongcheng, Wang Yun. Research on Related Issues of Improving Investment and Financing Mechanism of Strategic Emerging Industries [J]. *Wuhan Finance, 2014 (02): 18-21.*

[120] Hu Jiya. Analysis of the Financing Status of Strategic Emerging Industry and Choice of Innovation Path Based on 120 Sample Enterprise Data [J]. *Social Sciences in Xinjiang, 2019 (05): 57-70+153.*